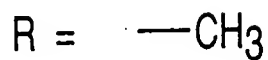
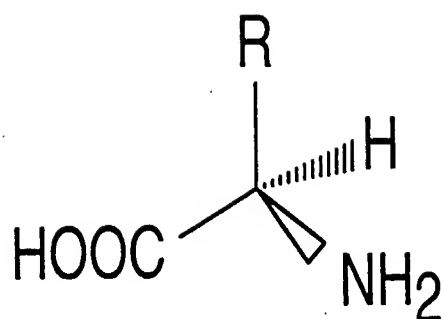
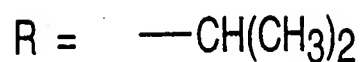


FIG. 1(A)

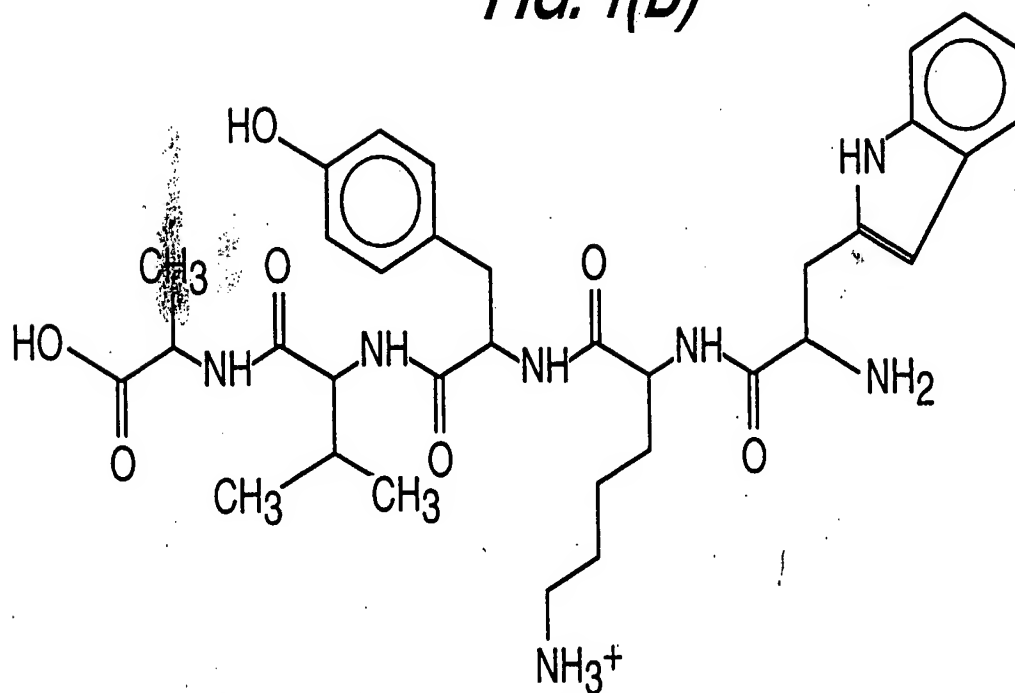


ALANINE



VALINE

FIG. 1(B)



HOOC—ALANINE VALINE-TYROSINE-LYSINE-TRYPTOPHAN—NH₃⁺

5' AUG UAC ACU AAA CAU GAU GAU AUC CGA AAA UGA 3' mRNA

TRANSLATION

PROTEIN

fMet Tyr Thr Lys Asp His Asp Ile Arg

RIBO-SOME

60 S

40 S

5' 3' mRNA

(INITIATION COMPLEX)

PEPTIDYL TRANSFERASE

TRANSLOCATION

NASCENT PROTEIN

fMet Tyr Thr Arg Ile Asp Asp His Lys Tyr Thr fMet

The diagram illustrates the process of translation. At the top, an mRNA sequence is shown: 5' AUG UAC ACU AAA CAU GAU GAU AUC CGA AAA UGA 3'. An arrow labeled 'TRANSLATION' points to a completed protein chain. The protein is a linear sequence of amino acids: fMet, Tyr, Thr, Lys, Asp, His, Asp, Ile, Arg, and Lys. Below this, the process is shown in detail. It starts with a ribosome (60S and 40S subunits) and an mRNA strand. An initiation complex forms with fMet-tRNA. Then, peptide transferase adds amino acids (Tyr, Thr, Arg, Ile, Asp, Asp, His, Lys) to the growing chain. Translocation moves the ribosome along the mRNA. The final stage shows the nascent protein chain (fMet, Tyr, Thr, Arg, Ile, Asp, Asp, His, Lys, Tyr, Thr, fMet) being released from the ribosome.

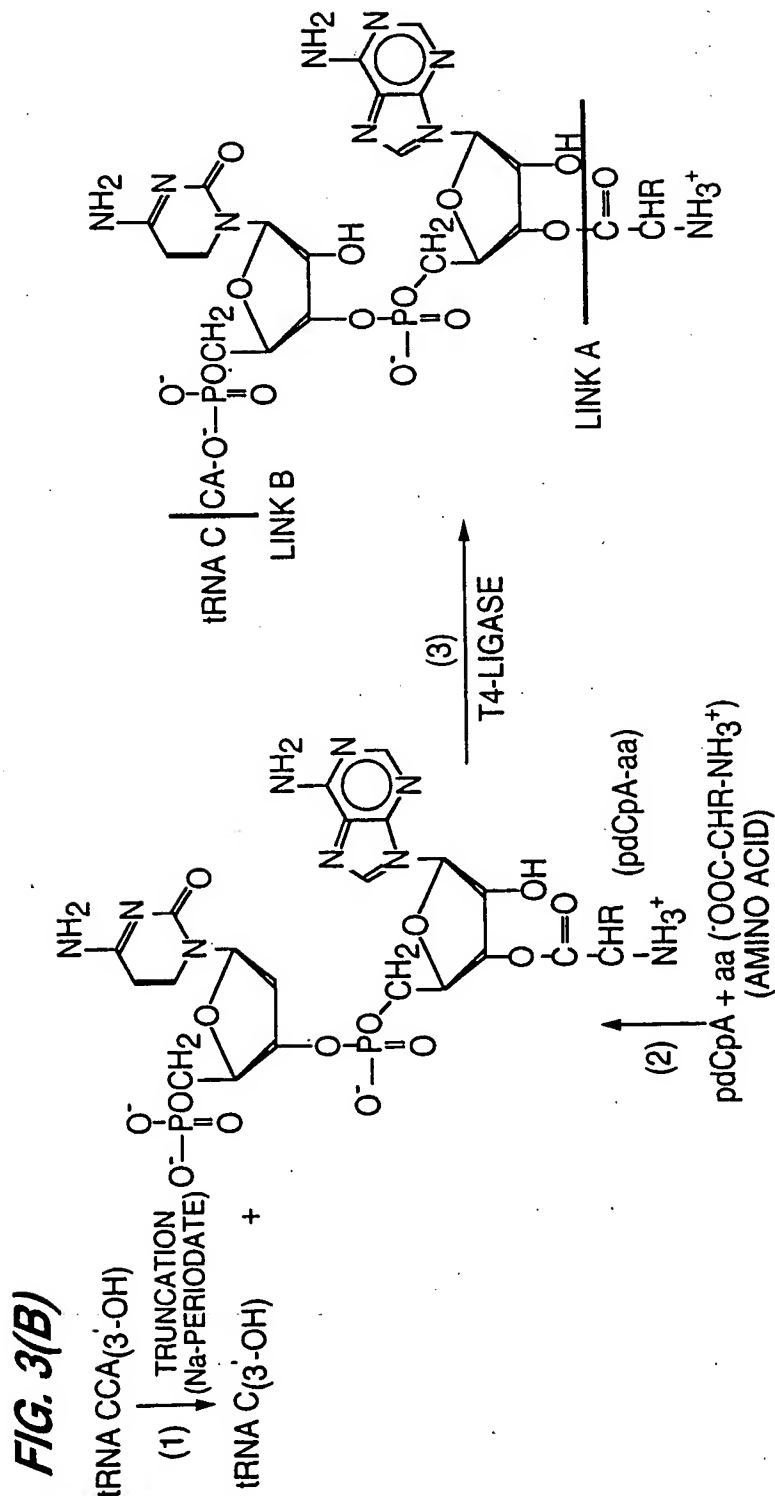
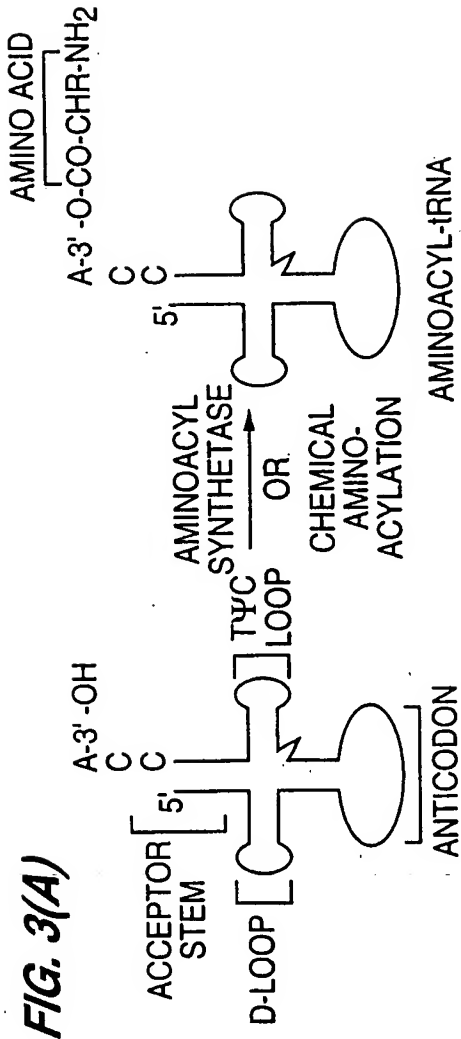
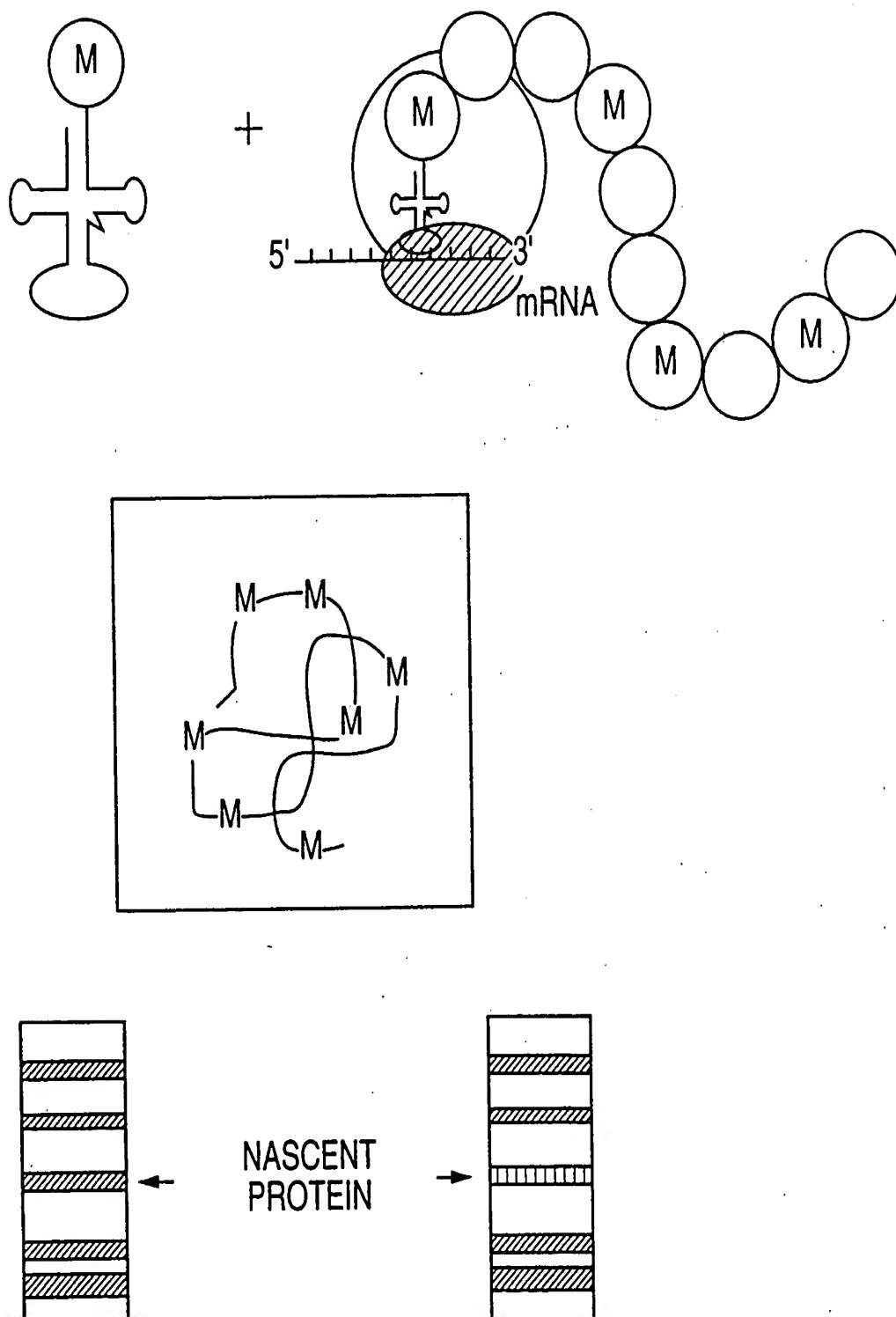


FIG. 4



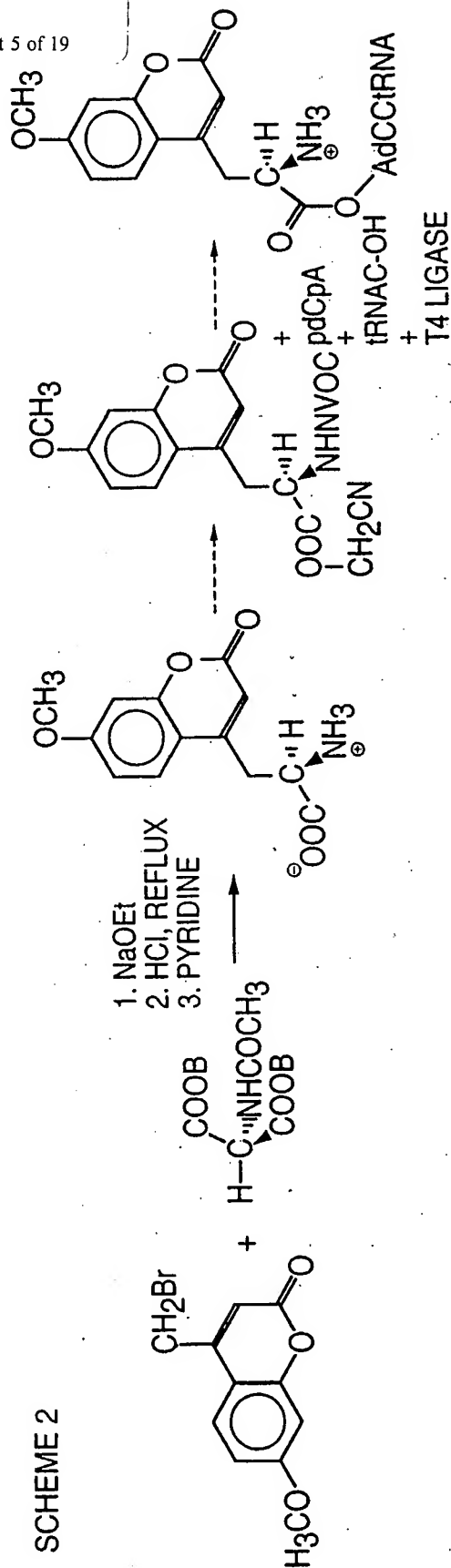
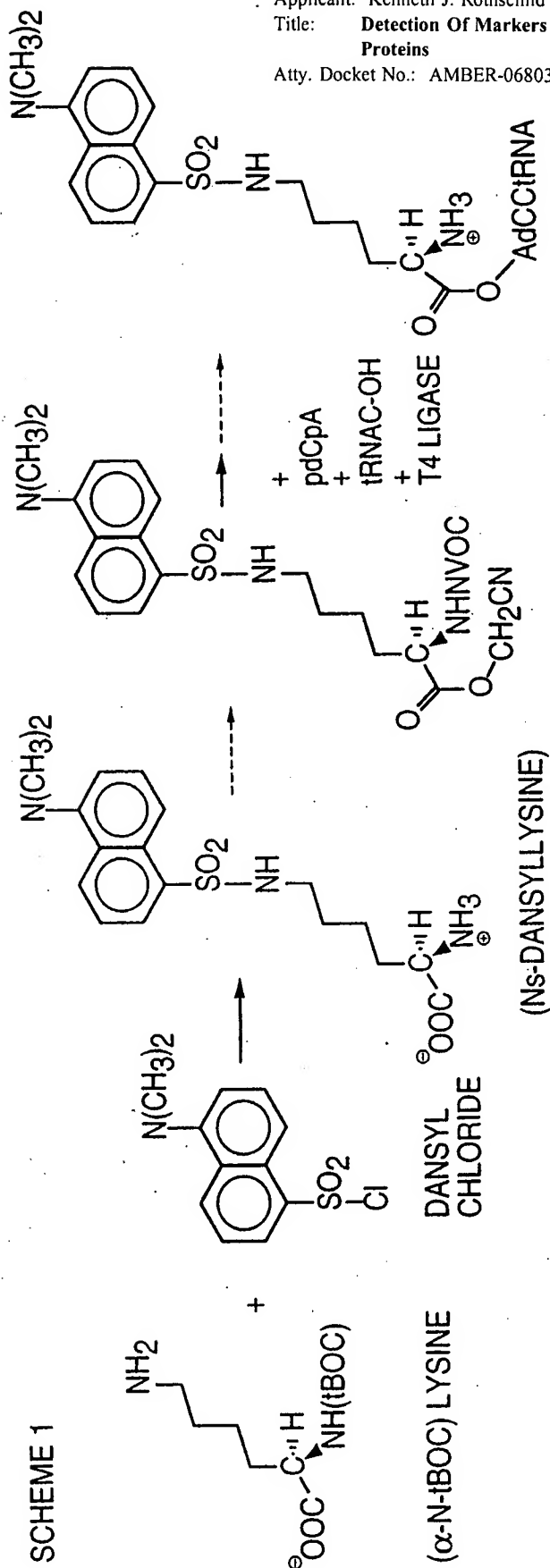


FIG. 6(A)

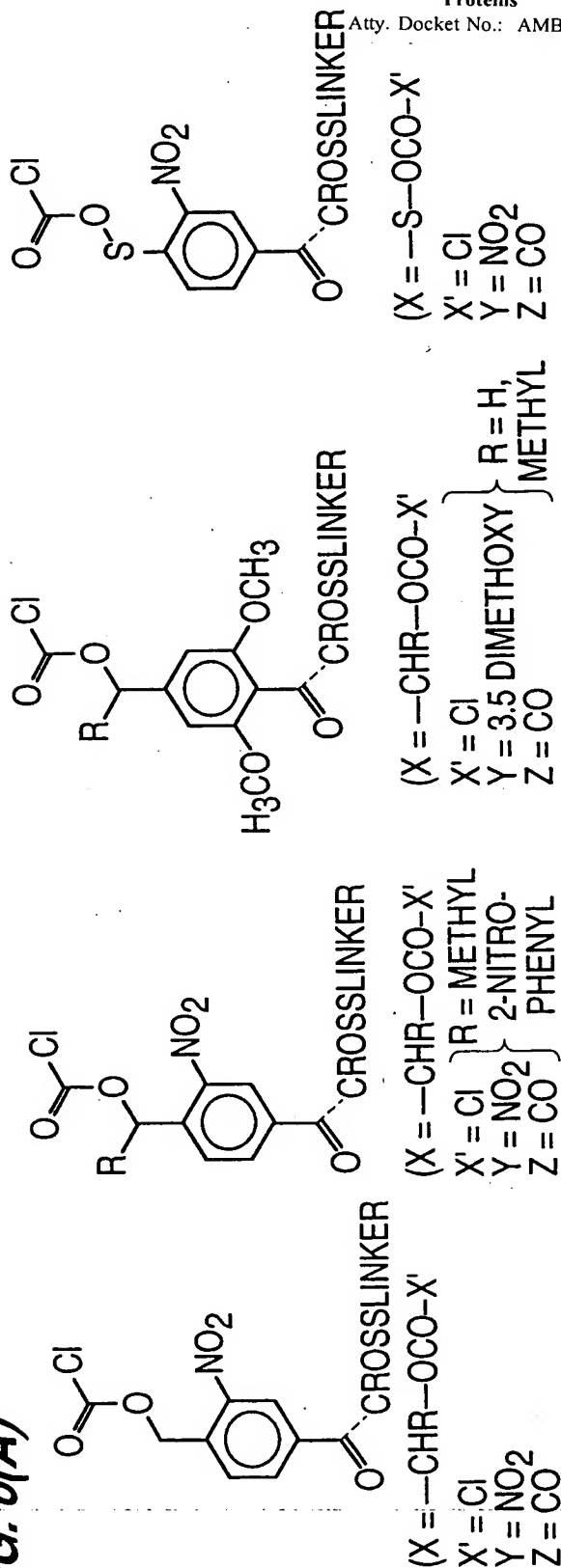


FIG. 6(B)

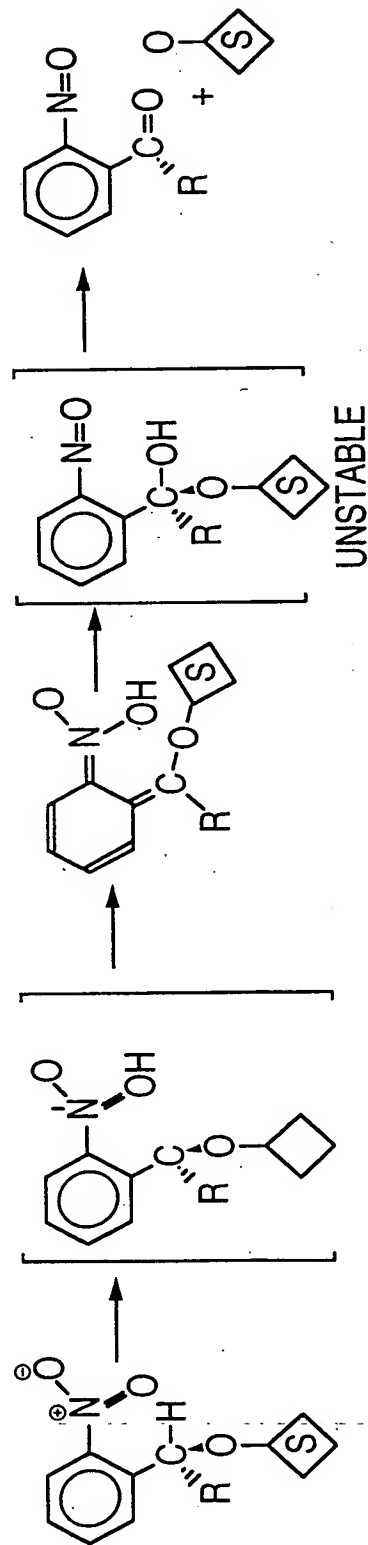


FIG. 7

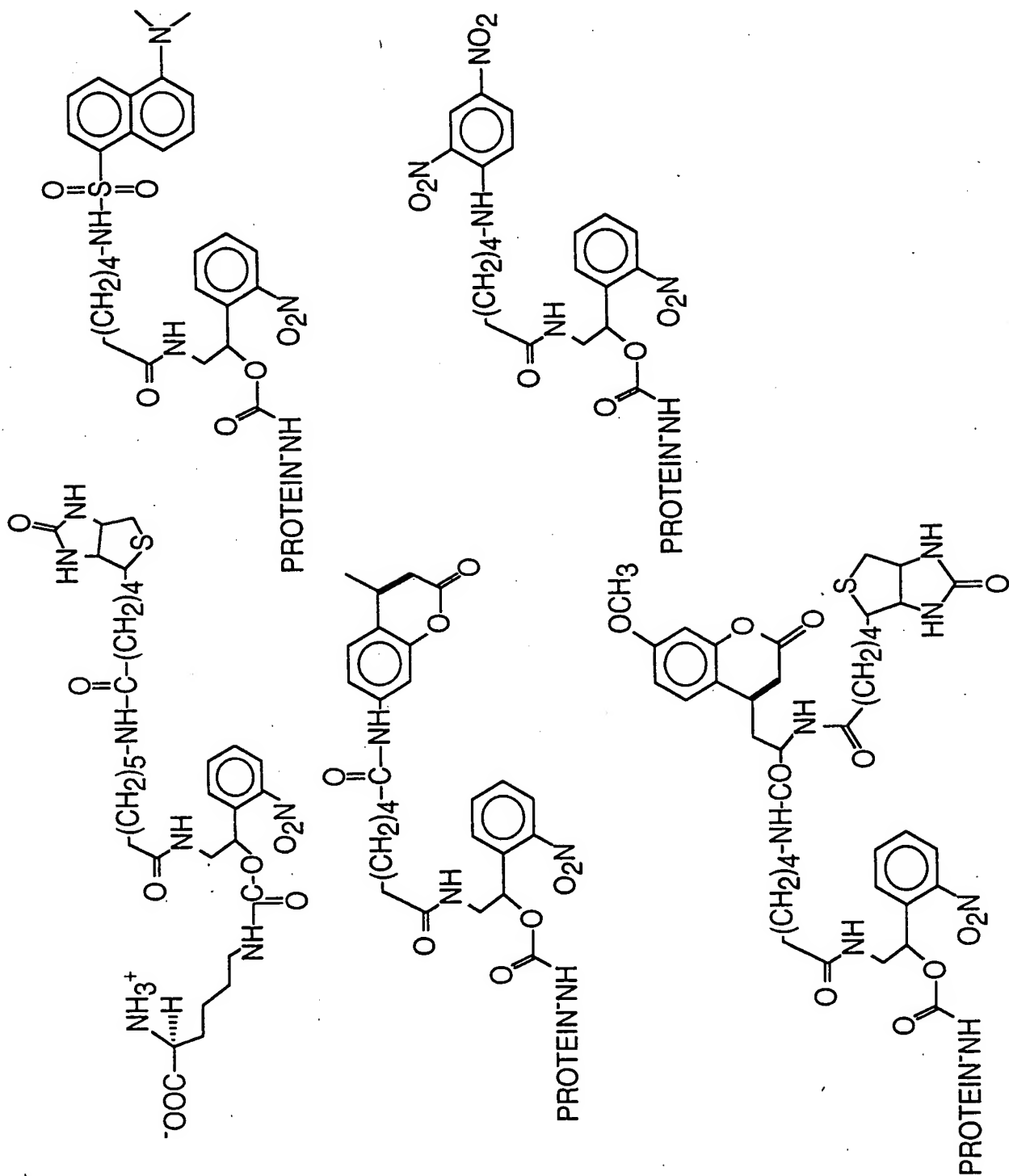


FIG. 7

FIG. 8(A)

PHOTOCLEAVABLE BIOTINS

O-NITROBENZYL

RING DEILVALIZATION

α -SUBSTITUTION

3,5-DIMETHOXY
BENZYLOXYCARBONYL

2-NITROBENZYLSULFENYL

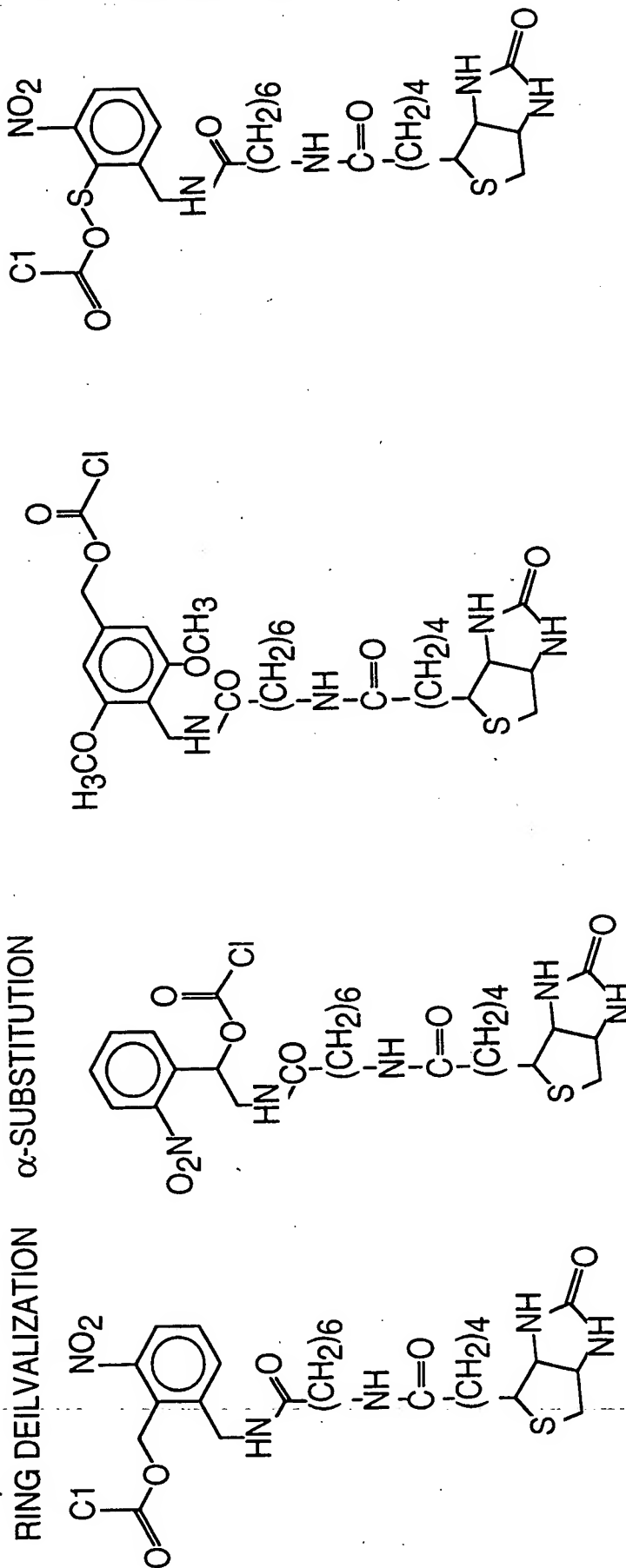


FIG. 8(B)

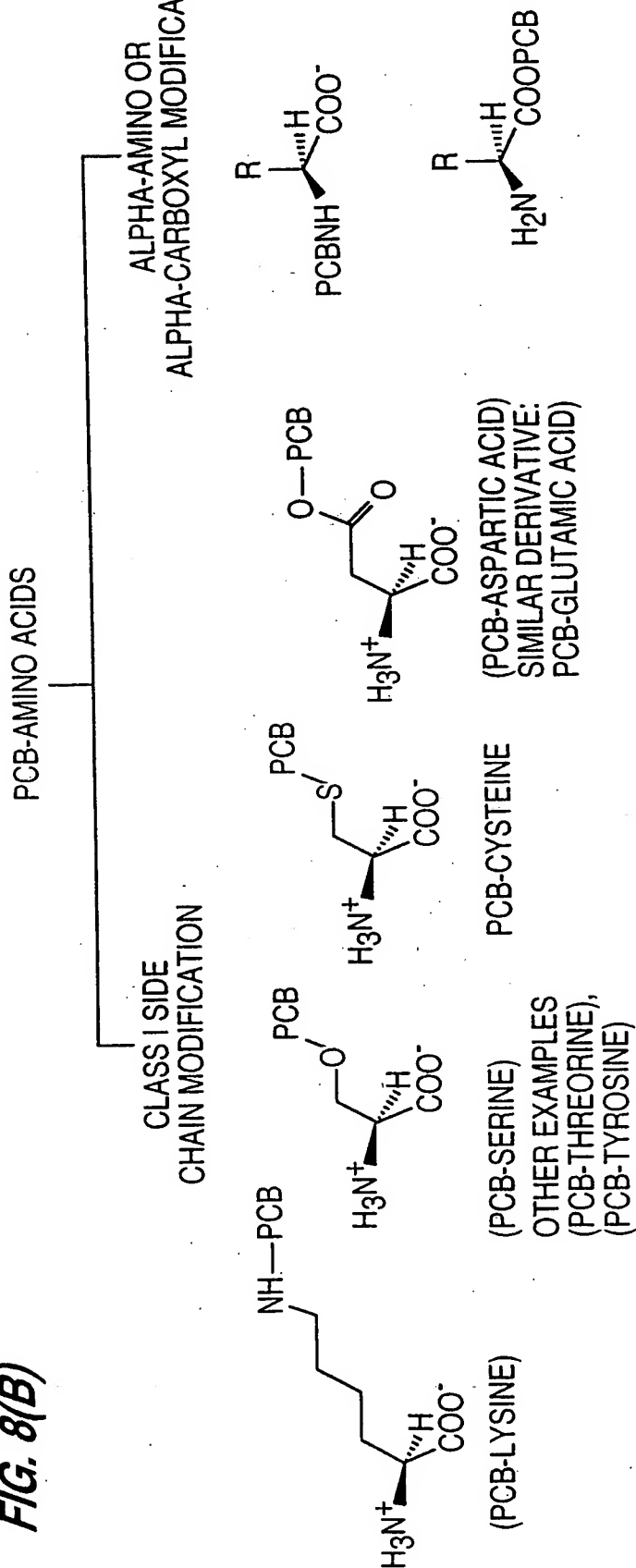
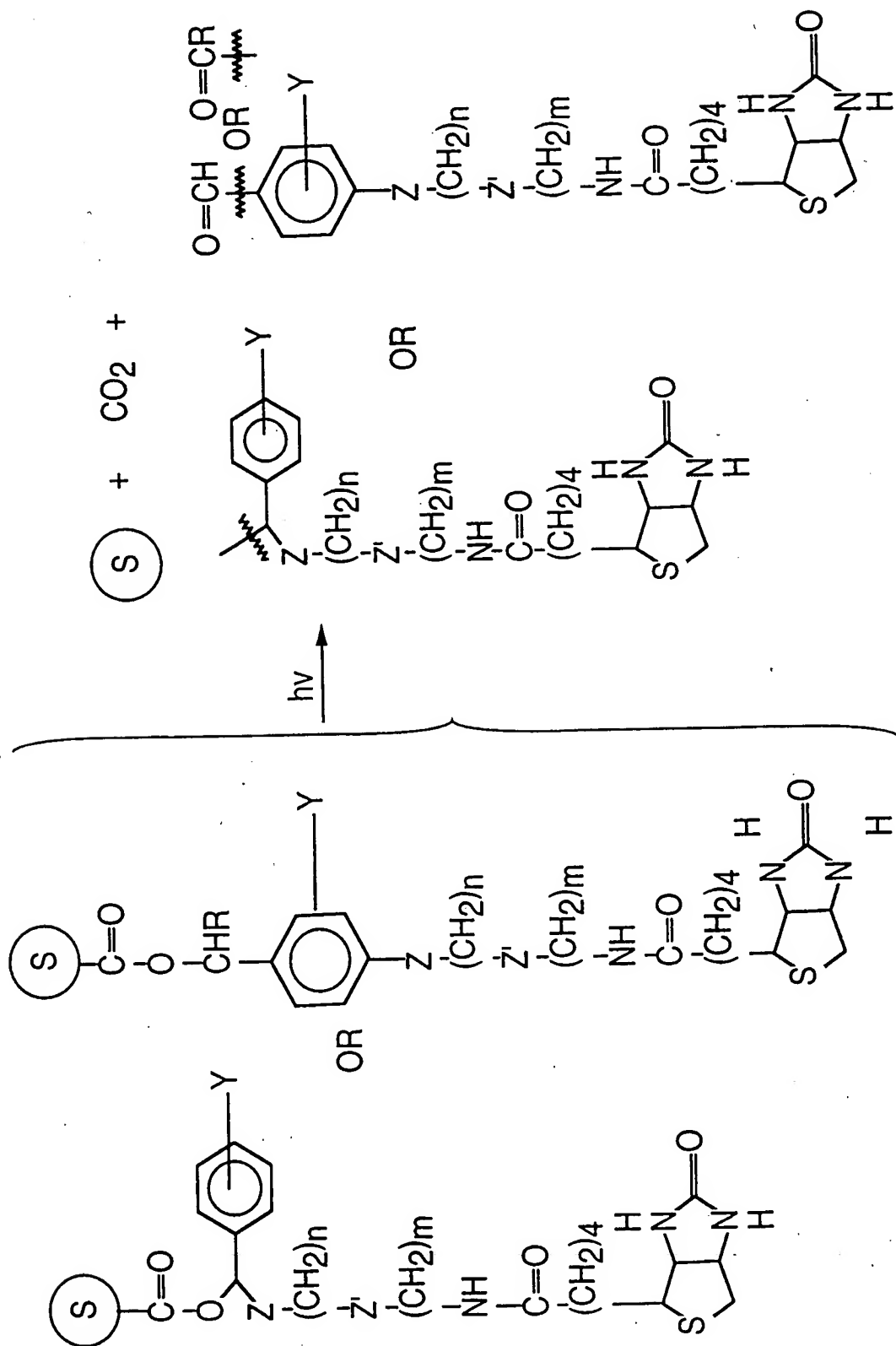


FIG. 9



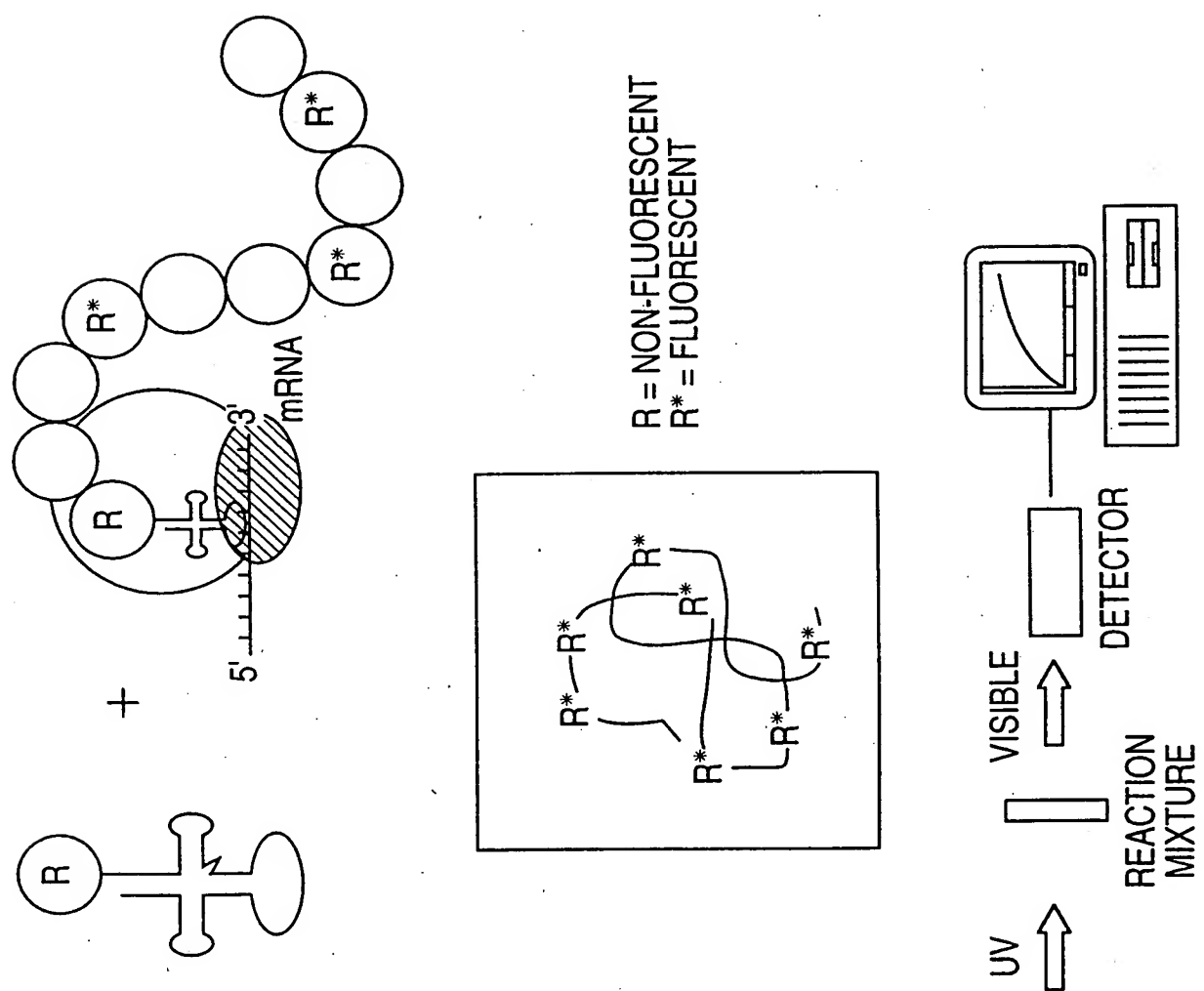


FIG. 10

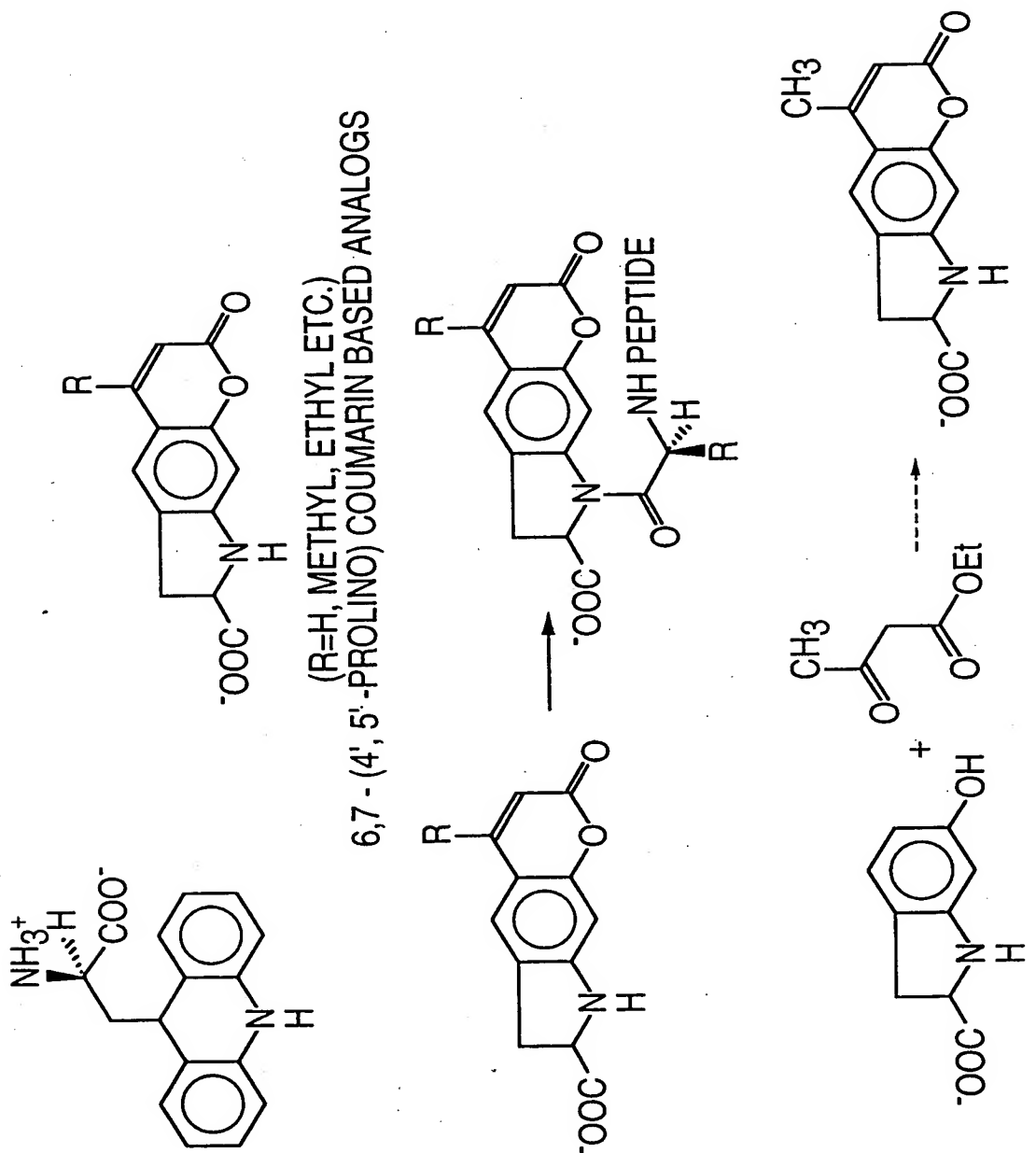


FIG. 11

X' = Cl, O-NHYDROXYSUCCINIMIDYL,
O-CH₂CN, OPhF₅, OPhCl₅,
N₃ ETC. (REACTIVE DERIVATIVE)

R = H, ALKYL, SUBSTITUTED ALKYL, ARYL,
SUBSTITUTE ARYL

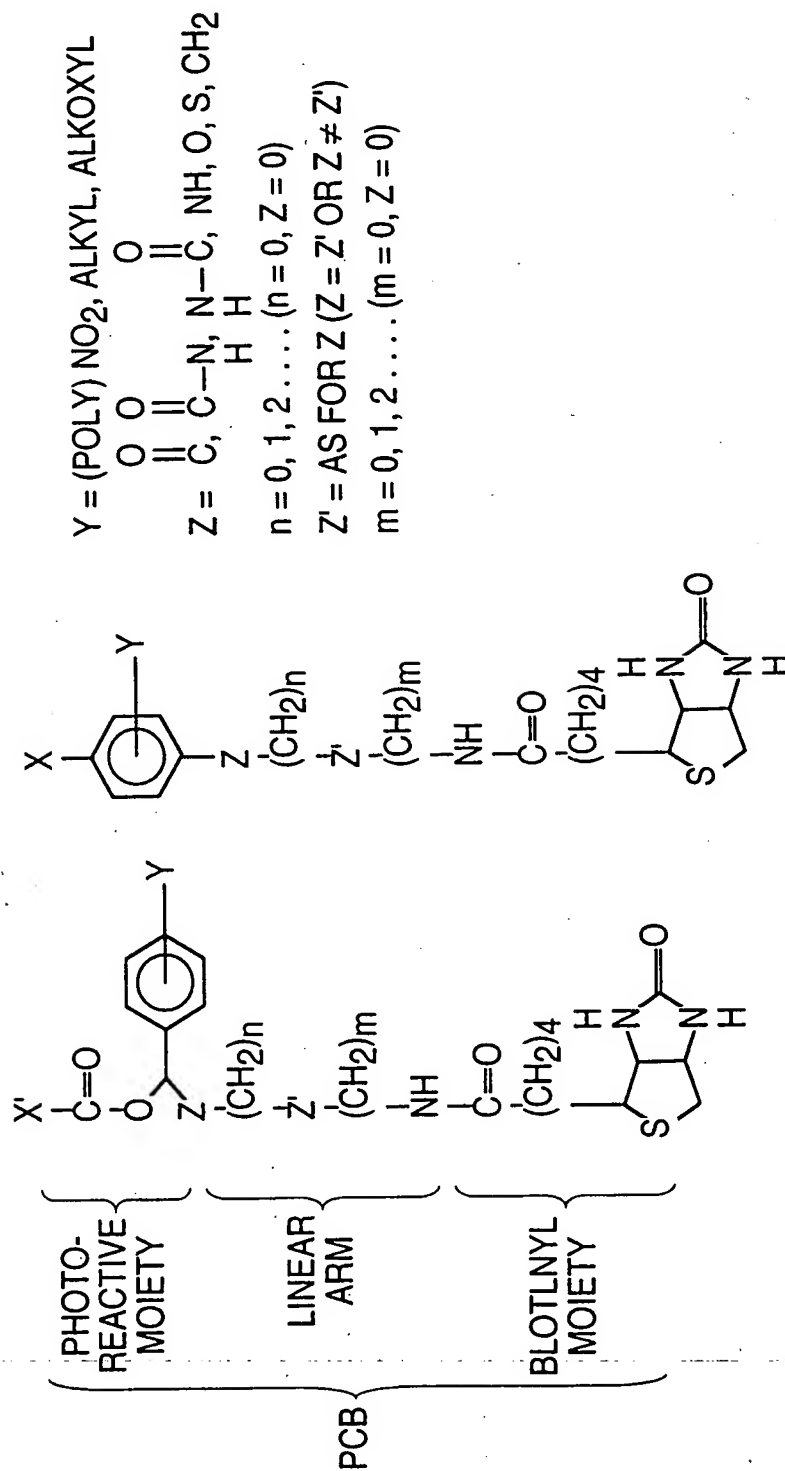
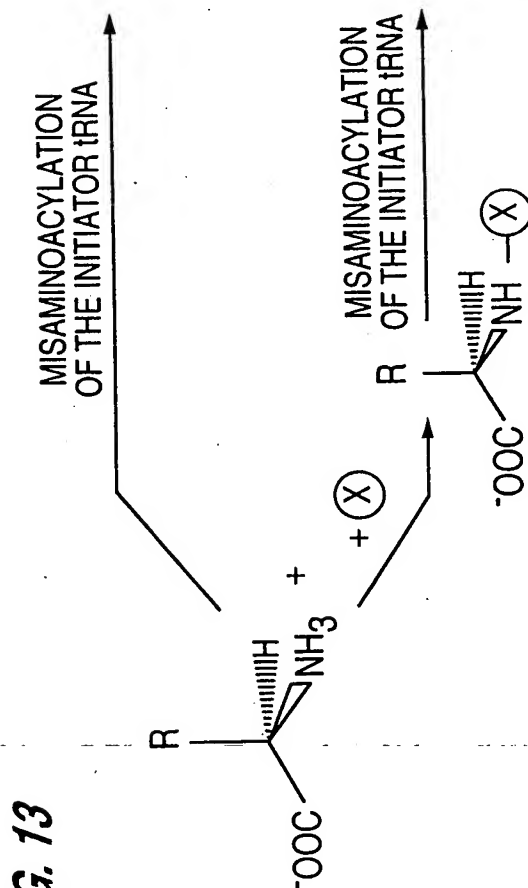


FIG. 13



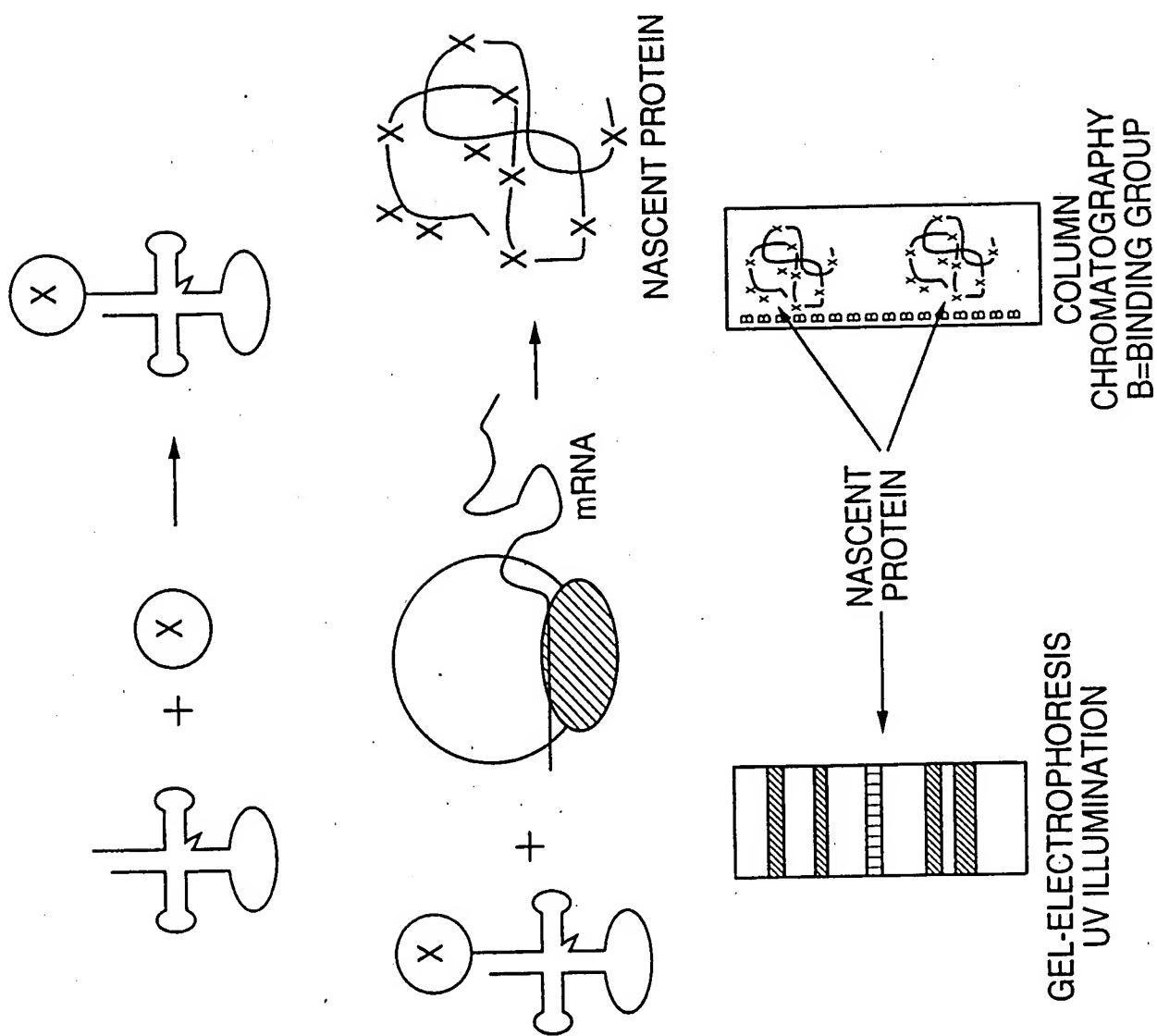
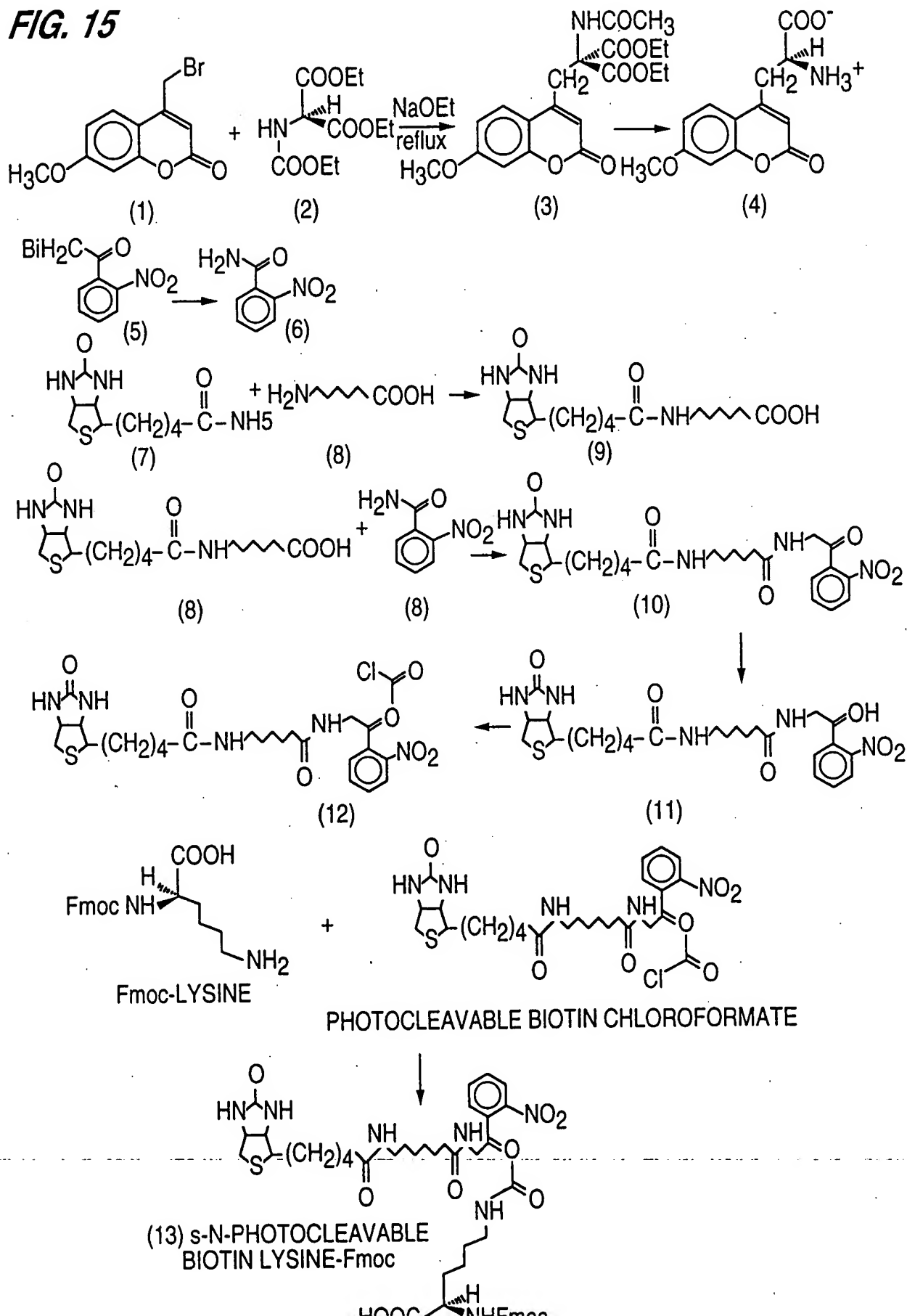
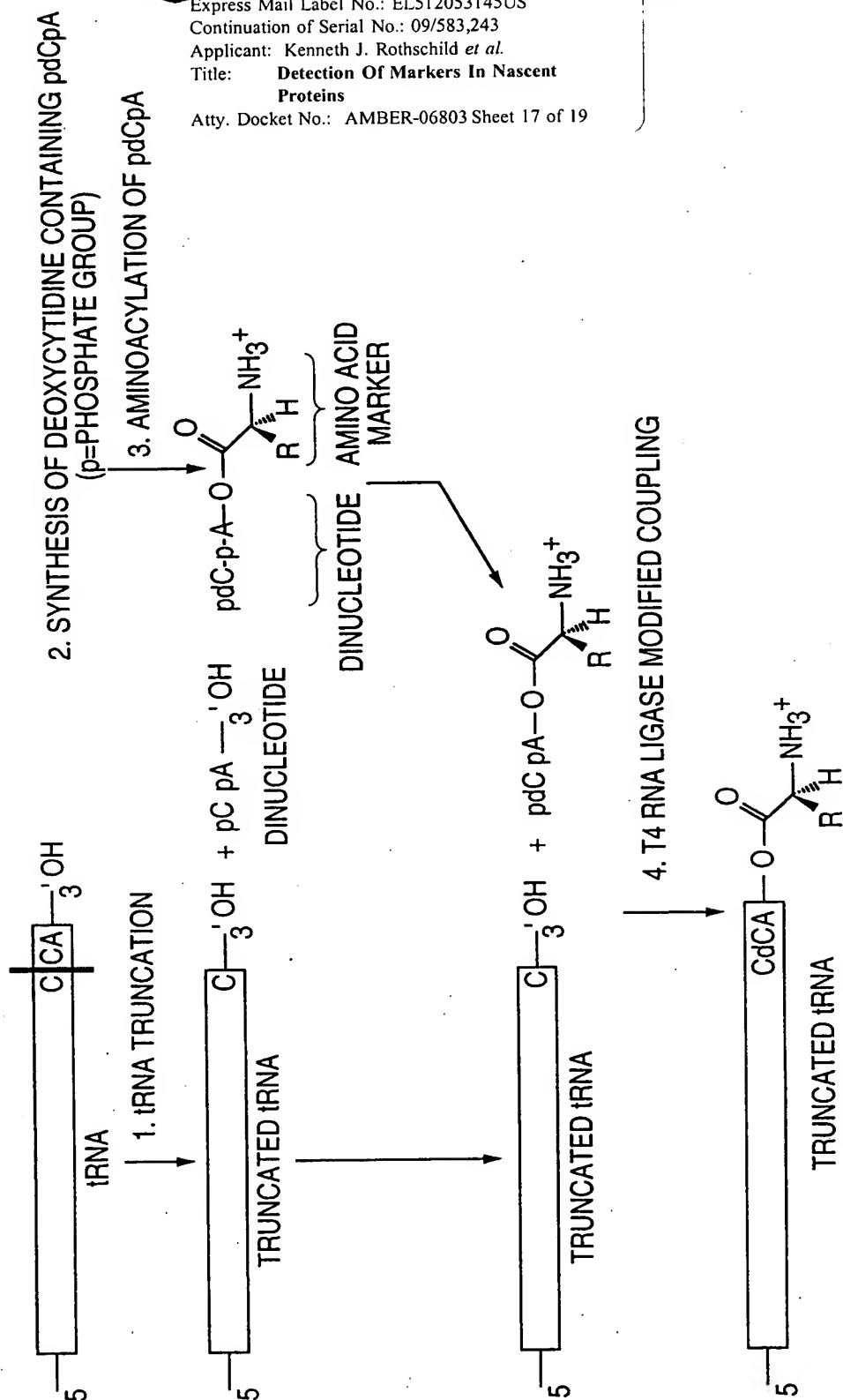


FIG. 14

FIG. 15





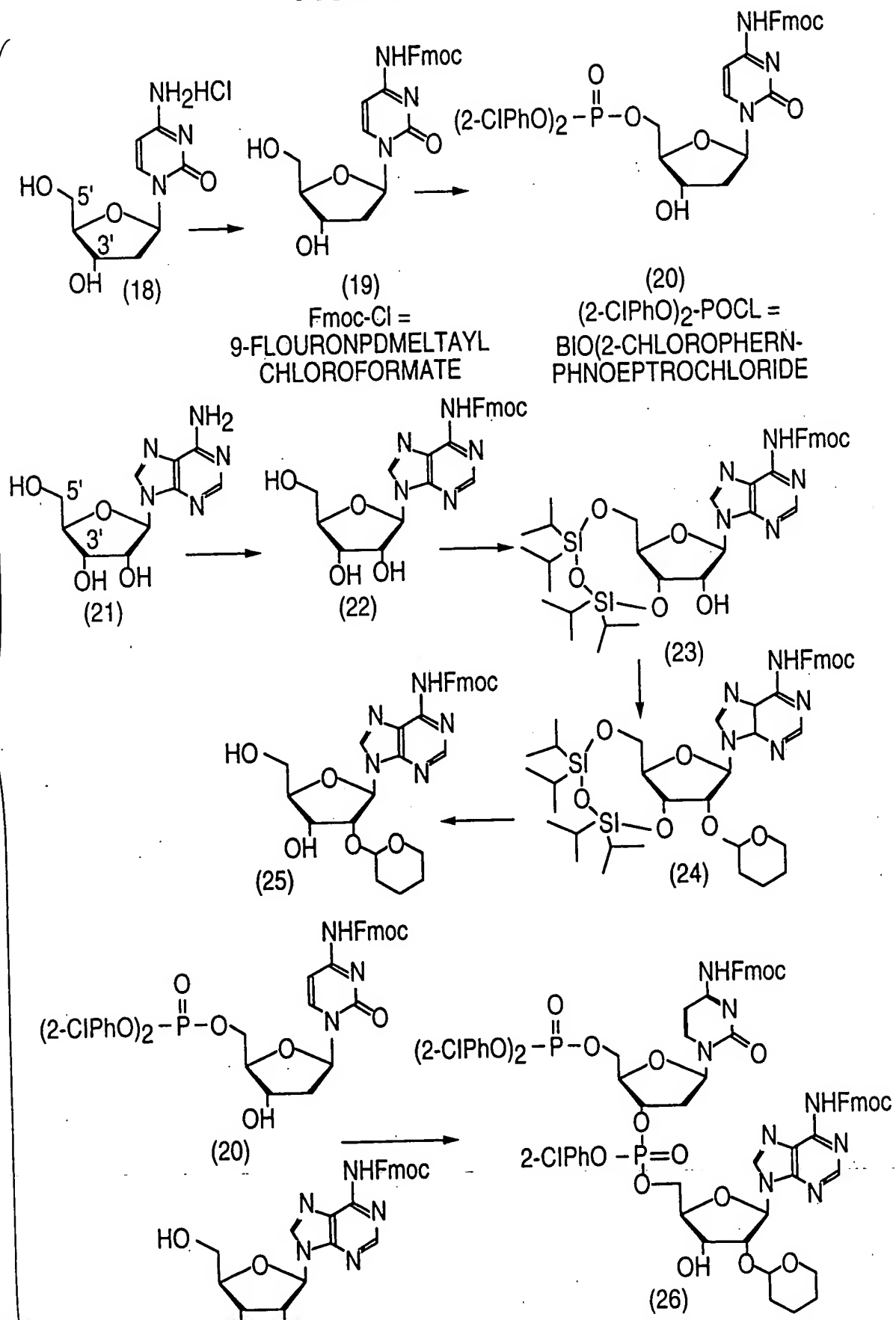


FIG. 18

